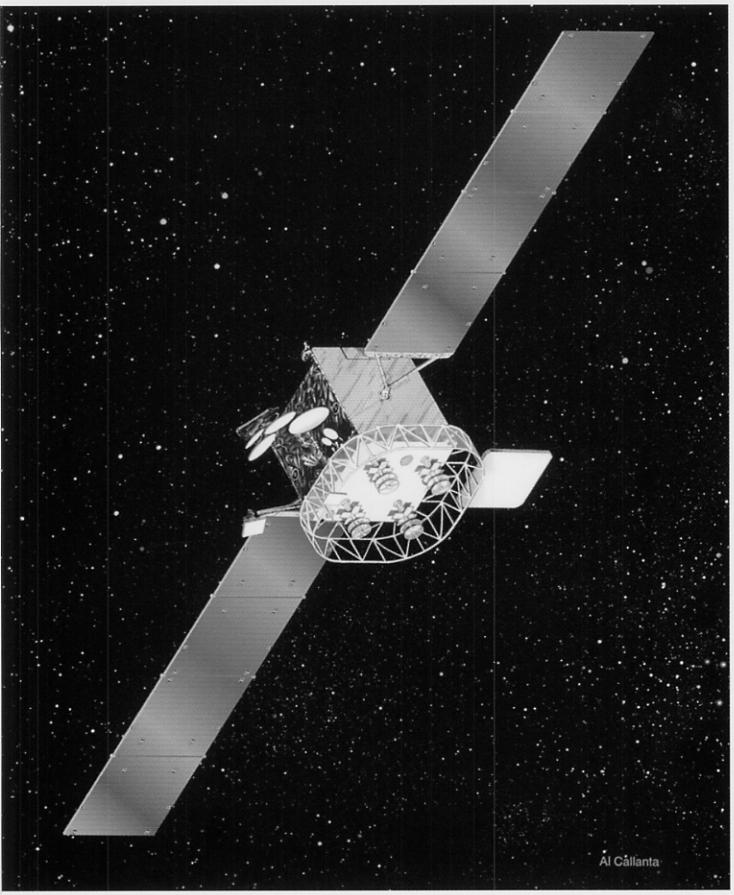
GBS

Global Broadcast Service (GBS) Joint Program



Mission

Provide a combined space, Command, Control, Communications, and Intelligence (C3I), broadcast management, and information system that provides a worldwide, one-way, high-speed flow of high-volume information to forces garrisoned, deployed, or on the move.

Background

The Gulf War, which was the first "electronic/information war," exposed the need for a very high data rate (HDR) service to lower echelons. The U.S. capacity to transport large amounts of electronic information was limited. Most information could not be shipped to the theater electronically.

Following the initial success of the Joint Broadcast Service, supporting Bosnia Command and Control Augmentation, the Global Broadcast Service (GBS) was designated as the answer to meeting worldwide information dissemination requirements. It is a one-way, space-based HDR broadcast communication system that provides information to small, transportable receive dish antennas. GBS can quickly disseminate information products to a variety of Joint military user platforms.

Capabilities

GBS operates a system of uplink sites, broadcast satellite payloads, receive suites (RS), and broadcast management systems. A primary uplink site, referred to as a Primary Injection Point (PIP), through which information products are transmitted to the satellite for relay to forces over a large geographic area, serves each satellite. The fixed transmit suite consists of a PIP and a Satellite Broadcast Manager (SBM). There are three fixed transmit suites: Hahiawa, HI; Norfolk, VA; and Sigonella, IT. GBS also has the capability,

through use of the Theater Injection Point (TIP), to inject information directly from within a theater of operations. GBS operates as a one-way, wideband transmission service capable of supporting timely delivery of classified and unclassified video, imagery, and data products for mission support and theater information transfer.

GBS is being implemented in three phases. The first phase consisted of leased commercial satellite services and commercial off-the-shelf RS. The phase 2 Space Segment consists of a transponder package hosted on Ultra High Frequency Follow-On (UFO) Satellites 8, 9, and 10. The Wideband Gapfiller System (WGS) will complement the UFO GBS with additional transponder capacity and coverage. Phase 3 is the objective GBS on-orbit capability that will provide increased capacity, worldwide coverage, and the capability to broadcast near continuous or time critical information to broadly dispersed users. Current plans provide the objective GBS capability as part of a future system.

The SBM serves as the dissemination point for GBS information provided from national and theater sources. The RS receives, stores, and manipulates the GBS radio frequency signal data and provides a human/computer interface. Ground fixed and transportable, shipboard, and subsurface RSs have been fielded.

This provides a land and sea based capability to receive the GBS broadcast. In the future, a multiband Airborne Wideband Terminal is expected to deliver broadcast capability to aircraft in flight. This will enable product delivery to warfighters anywhere in the battlespace.

General Characteristics

Primary function:	High-capacity GBS (Audio, video, files, Web, common operating picture) for the Military
Primary contractor:	Raytheon
Payload:	Transponded Ka/leased commercial Ku-band communications suite
Capability:	96 Mbps per UFO Ka-band satellite
Host vehicle:	UFO satellites 8/9/10 (Ka), Galaxy XR (Ku), Telestar 11 (Ku)
Inventory:	3 PIPs, 137 RSs, 2 TIPs

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ESC/MCG
50 Griffiss Street
Hanscom AFB, MA 01731–1620
781.271.6330